## Case 3352

# Productus compressus Waagen, 1884 (currently Compressoproductus compressus; Brachiopoda): proposed conservation of the specific name

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Abstract. The purpose of this application, under Articles 23.9.3 and 81.2.1 of the Code, is to conserve the specific name *Productus compressus* Waagen, 1884 for the type species of the Permian brachiopod genus *Compressoproductus* Sarytcheva in Sarytcheva et al., 1960. The name is a junior primary homonym of *Productus compressus* Say in James, 1823, which has been seldom used since it was established. Waterhouse & Piyasin (1970) proposed *Compressoproductus morahpressus* as a substitute name for *Productus compressus* Waagen, 1884, but this name has never been used other than by Waterhouse (1978, 1983). It is proposed that the name *Productus compressus* Waagen, 1884 be conserved by suppression of *Productus compressus* Say, 1823.

Keywords. Nomenclature; taxonomy; Brachiopoda; Productus; Compressoproductus; Compressoproductus compressus; Compressoproductus morahpressus; Permian.

1. *Productus compressus* Waagen, 1884 (p. 710, pl. 81, figs. 1, 2) was described in detail and illustrated from the Permian of the Salt Range (Pakistan). It is a well-recognised linoproductoid brachiopod species.

2. Sarytcheva in Sarytcheva et al. (1960, p. 231) designated *P. compressus* Waagen, 1884 as the type species of *Compressoproductus*, which is a commonly accepted semi-cosmopolitan linoproductoid genus of the Permian. The names *P. compressus* Waagen, 1884 and *Compressoproductus compressus* (Waagen, 1884) have been widely used in major taxonomic studies including the First and Second Editions of the *Treatise on Invertebrate Paleontology* (e.g. Muir-Wood & Cooper, 1960, p. 319; Muir-Wood & Williams, 1965, p. 507; Brunton et al., 2000, p. 546). This name has previously been reclassified within the genus *Striatifera* Chao, 1927 (type species *Mytilus striatus* Fischer de Waldheim, 1837) by some authors (Chao, 1927, p. 99; Reed, 1931, p. 12; Licharew, 1937, p. 112).

3. Prior to Waagen (1884), *Productus compressus* Say was proposed in James (1823, p. 150) with a brief descriptive note and no illustration, based on material from the Rocky Mountains. Nevertheless, a modern definition of *P. compressus* Say (supposedly of a late Palaeozoic age) would not be possible on the information provided by Say in James (1823), and the specific name has not been used as valid except by Waterhouse & Piyasin (1970) and Branson (1948, pp. 456, 535) who accepted that *P. compressus* Waagen, 1884 is a junior primary homonym of

*P. compressus* Say in James, 1823. This fact, however, has largely been ignored, except by Waterhouse & Piyasin (1970) as outlined below. The above two instances of using *P. compressus* Say in James, 1823 as a valid name after 1899 mean that the conditions of Article 23.9.1.1 of the Code (Reversed Precedence) are not met and the case is referred to the Commission for a ruling.

4. Waterhouse & Piyasin (1970, p. 133) proposed a new substitute name *Compressoproductus morahpressus* for *P. compressus* Waagen, 1884 and designated it the type species of *Compressoproductus*. *C. morahpressus* is currently the valid name for Waagen's nominal species-group taxon under Articles 23.3.5 and 60.3 of the Code (Junior homonyms without synonyms), although, under Article 67.1.2 (The name of the type species), it is not the type species of *Compressoproductus*, because the name of a type species of a genus remains unchanged even when it is a junior homonym (*P. compressus* Waagen, 1884 in the current case). However, to my knowledge only Waterhouse (1978, p. 77; 1983, p. 129) subsequently adopted the name *C. morahpressus*. In addition, Waterhouse & Piyasin (1970) selected the lectotype from syntypes of Waagen's *compressus*, and this remains valid for this nominal species under Articles 72.7 and 74.1 (Name-bearing types of new replacement names).

5. From the above, it is seen that the senior homonym *Productus compressus* Say in James, 1823 is not in use. *Compressoproductus morahpressus* Waterhouse & Piyasin, 1970 (the valid objective synonym of *Productus compressus* Waagen, 1884) has also not commonly been adopted by taxonomists. who continued using the names *Productus compressus* Waagen, 1884 or *Compressoproductus compressus* (Waagen, 1884) after the replacement name was introduced (e.g. Cooper & Grant, 1975, p. 1205; Jin & Hu, 1978, p. 115; Licharew & Kotljar, 1978, p. 99; Jin et al., 1979, p. 94; Zhan, 1979, p. 90; Liu et al., 1982, p. 188; Wang et al., 1982, p. 225; Wang, 1984, p. 196; Liang, 1990, p. 209; Shen & He, 1994, p. 160; Zeng et al., 1995, p. 23; Leven, 1997, p. 24; Brunton et al., 2000, p. 546; Tazawa et al., 2000, p. 9; Shi et al., 2003, p. 1059; Wang & Zhang, 2003, p. 112). It is therefore desirable for reasons of stability to retain the current usage of *Productus compressus* Waagen, 1884 by suppression of the senior homonym *Productus compressus* Say in James, 1823.

6. The International Commission on Zoological Nomenclature is accordingly asked:

- to use its plenary power to suppress the name *compressus* Say in James, 1823, as published in the binomen *Productus compressus*, and all uses of the name before that by Waagen (1884) for the purposes of both the Principle of Priority and the Principle of Homonymy;
- (2) to place on the Official List of Specific Names in Zoology the name *compressus* Waagen, 1884, as published in the binomen *Productus compressus* (the specific name of the type species of *Compressoproductus* Sarytcheva in Sarytcheva et al., 1960);
- (3) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the following names:
  - (a) *compressus* Say in James, 1823, as published in the binomen *Productus compressus* and as suppressed in (1) above;
  - (b) *morahpressus* Waterhouse & Piyasin, 1970, as published in the binomen *Compressoproductus morahpressus* (a junior synonym of *Productus compressus* Waagen, 1884).

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#### References

- Branson, C.C. 1948. Bibliographic index of Permian invertebrates. *Geological Society of America Memoir*, vol. 26. 1049 pp.
- Branton, C.H.C., Lazarev, S.S., Grant, R.E. & Jin, Y. 2000. Suborder Productidina. Pp. 424–618 in Kaesler, R.L. (Ed.), *Treatise on Invertebrate Paleontology, Part H, Brachiopoda Revised*, vol. 3. 469 pp. Geological Society of America and University of Kansas, Lawrence.
- Chao, Y.T. 1927. Productidae of China, Part 1: Producti. Palaeontologia Sinica, series B, vol. 5 (fascicle 2). 244 pp.
- Cooper, G.A. & Grant, R.E. 1975. Permian brachiopods of West Texas III (Parts 1 and 2). Smithsonian Contributions to Paleobiology, 19: 795–1921.
- Fischer von Waldheim, G. 1837. Oryctographie du gouvernement de Moscou. 2nd ed. 202 pp., pls. 20–26. Société Imperiale des Naturalistes de Moscou, Moscow.
- James, E. 1823. Account of an Expedition from Pittsburgh to the Rocky Mountains, performed in the Years 1819 and '20, by order of the Hon. J.C. Calhoun, Sec'y of War: under the command of Major Stephen H. Long, from the notes of Major Long, Mr. T. Say, and other gentlemen, vol. 1. 503 pp. H.C. Carey & I. Lea, Philadelphia.
- Jin, Y. & Hu, S. 1978. Brachiopods of the Kuhfeng Formation in South Anhui and Nanking Hills. *Acta Palaeontologica Sinica*, 17: 101–127.
- Jin, Y., Ye, S., Xu, H. & Sun, D. 1979. Brachiopoda. Pp. 60–225 in Nanjing Institute of Geology and Palaeontology and Qinghai Institute of Geosciences (Eds.), Paleontological Atlas of Northwest China, Qinghai Province, vol. 1: Lower Paleozoic–Cenozoic. 393 pp., 96 pls. Geological Press, Beijing.
- Leven, E.Ja. 1997. Permian stratigraphy and Fusulinida of Afghanistan with their paleogeographic and paleotectonic implications. *Geological Society of America Special Paper*, 316. 134 pp.
- Liang, W. 1990. Lengwu Formation of Permian and its Brachiopod Fauna in Zhejiang Province. *Geological Memoirs*, ser. 2, no. 10. 522 pp., 84 pls. Geological Publishing House, Beijing.
- Licharew, B.K. 1937. Brakhiopody permskikh otlozhenii SSSR. Vypusk 1. Permskie Brachiopoda Severnogo Kavkaza. Semeistva: Chonetidae Hall et Clarke i Productidae Gray [Brachiopoda of the Permian system of USSR, Fasc. 1. Permian Brachiopoda of North Caucasus. Families: Chonetidae Hall et Clarke and Productidae Gray]. *Monografii po paleontologii SSSR [Paleontology of USSR Monographs*], vol. 39, 152 pp.
- Licharew, B.K. & Kotljar, G.V. 1978. Permskie brakhiopody yuzhnogo Primor'ya. Pp. 63–75, 96–99 in Popeko, L.I. (Ed.), Verklmii Paleozoi Severo-Vostochnoi Azii. 128 pp. AN SSSR DNTs Institut Tektoniki i Geofiziki, Vladivostok.
- Liu, Z., Tan, Z. & Ding, Y. 1982. Brachiopoda. Pp. 172–216 in Geological Bureau of Hunan (Ed.), Palaeontological Atlas of Hunan. *Geological Memoirs*, ser. 2, no. 1. 996 pp., 40 pls. Geological Publishing House, Beijing.
- Muir-Wood, H.M. & Cooper, G.A. 1960. Morphology, classification and life habits of the Productoidea (Brachiopoda). *Geological Society of America Memoir*, vol. 81. 447 pp., 135 pls.
- Muir-Wood, H.M. & Williams, A. 1965. Strophomenida. Pp. 361–521 in Moore, R.C. (Ed.), Treatise on Invertebrate Paleontology, Part H Brachiopoda, vol. 1. 521 pp. Geological Society of America and University of Kansas Press, New York.
- Reed, F.R.C. 1931. New fossils from the *Productus* Limestones of the Salt Range, with notes on other species. *Memoirs of the Geological Survey of India, Palaeontologia Indica, New Series*, **17**: 1–56.

- Sarytcheva, T.G., Licharew, B.K. & Sokolskaja, A.N. 1960. Otriad Productida. Pp. 221–238 in Orlov, Y.A. (Ed.), Osnovy Paleontologii, Mshanki-Brakhiopody. 343 pp. 1zdatel'stvo Akademii Nauk SSSR, Moscow.
- Shen, S. & He, X. 1994. The brachiopod assemblages from the Changhsingian to lowermost Triassic of Southwest China and correlations over the Tethys. *Newsletters on Stratigraphy*, 31: 151–165.
- Shi, G.R., Shen, S. & Zhan, L. 2003. A Guadalupian–Lopingian (Middle to Late Permian) brachiopod fauna from the Juripu Formation in the Yarlung-Zangbo Suture Zone, southern Tibet, China. *Journal of Paleontology*, 77: 1053–1068.
- Tazawa, J., Takizawa, F. & Kamada, K. 2000. A Middle Permian boreal-Tethyan mixed brachiopod fauna from Yakejima, southern Kitakami Mountains, NE Japan. Science Reports of Niigata University, ser. E (Geology), 15: 1–21.
- Waagen, W. 1884. Salt Range fossils, Productus Limestone fossils, Brachiopoda. Memoirs of the Geological Survey of India, Palaeontologia Indica, ser. 13, 1(part 4) (fascicle 3-4): 547–728.
- Wang, G., Liu, Q., Ching, Y., Hu, S., Liang, W. & Liao, Z. 1982. Phylum Brachiopoda. Pp. 186–256. pls. 74–102 in Nanjing Institute of Geology and Mineral Resources (Ed.), *Paleontological Atlas of East China, Volume 2 (Late Paleozoic).* 495 pp. Geological Publishing House, Beijing.
- Wang, C. & Zhang, C. 2003. Brachiopod Faunas from the Tethys. 210 pp., 50 pls. Geological Publishing House, Beijing.
- Wang, S. 1984. Brachiopoda. Pp. 134–236 in Regional Geological Surveying Team of Hubei (Ed.), *Palaeontological Atlas of the Hubei Province*. 812 pp. Hubei Science and Technology Press, Wuhan.
- Waterhouse, J.B. 1978. Permian Brachiopoda and Mollusca from North-West Nepal. Palaeontographica, Abteilung A, 160: 1–175.
- Waterhouse, J.B. 1983. A Late Permian lyttoniid fauna from Northwest Thailand. Papers of Department of Geology, University of Queensland, 10: 111–153.
- Waterhouse, J.B. & Piyasin, S. 1970. Mid-Permian brachiopods from Khao Phrik, Thailand. Palaeontographica, Abteilung A, 135: 83–197.
- Zeng, Y., He, X. & Zhu, M. 1995. Permian Brachiopods and Community Succession in the Huavin Mountains, Sichuan. 187 pp. China University of Mineralogy Press, Xuzhou.
- Zhan, L. 1979. Brachiopoda. Pp. 61–100 in Hou, H., Zhan, L. & Chen, B. (Eds.), *The Coal-Bearing Strata and Fossils of the Late Permian from Guangtung*. 166 pp., 47 pls. Geological Publishing House, Beijing.

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